

The Equal Educational Opportunity Act: Measuring Equity

April 17, 2001

State Board of Education

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The Equal Educational Opportunity Act: Measuring Equity

Introduction

When the Legislature passed Act 60, the Equal Educational Opportunity Act (EEOA) in 1997, a provision of the law required the State Board of Education to develop a system to evaluate the equalizing effects of the state's new finance system and school quality standards. In addition,

Beginning in school year 2000 and every five years thereafter, or more often if requested by the general assembly, the state board shall report to the general assembly concerning the results of this evaluation and recommendations for change if needed. (16 V.S.A. §164(18))

By design the EEOA has been phased in over a four-year period, with the 2000-2001 school year marking the first full year of implementation. This report, the first EEOA evaluation required under the law, lays the groundwork for measuring outcomes in the years ahead. However, one conclusion can be drawn: In terms of financial equity, the EEOA has achieved the intended effect. Education tax rates are now uniformly tied to local per pupil spending levels across the state. This is a significant achievement.

While recent reports have offered some general findings about the impact of the EEOA on educational quality, we believe it is too early to draw definitive conclusions about the relationship between spending, school quality standards, and student performance. With regard to these issues, this report should be viewed as a baseline for future analyses.

What Has Been Learned

These equalizing effects of the EEOA have been documented during the first full year of implementation:

- The EEOA has eliminated the wide variation in tax rates that were previously based on local grand lists. Education tax rates are now uniformly tied to local per pupil spending levels across the state. In other words, a penny on the property tax rate now raises the same amount per pupil, regardless of where that pupil lives.
- School accountability procedures for student performance have been established under the EEOA, and schools statewide are now required to implement uniform quality standards.

There is some evidence to support the following observations, although not enough data exist to draw definitive conclusions:

- Per pupil spending variations between districts appear to be narrowing.
- Districts that have historically spent lower amounts per pupil appear to be increasing spending levels at a greater rate than those with higher per pupil spending amounts.

- Performance gaps among different student groups (e.g., gender, socioeconomic background) appear not to exist in a small number of schools.

Evolving Concepts of Equity

Achieving financial and educational equity is far more complex than simply redistributing revenue to schools. If we use the traditional measure of per pupil spending to gauge educational equity, the preliminary indicators are positive: the spending gaps between school districts appear to be narrowing.

It is far more difficult, however, to take equity measurement to the next level. While it is often measured by how much money is spent from one school district to the next, differences *within* schools measure equally important questions, such as whether students from poorer households have the same learning opportunities as other students. We know that certain groups of Vermont students consistently perform at lower levels than other groups. For example, males score lower than females in reading and writing. At all grade levels and areas of assessment, on average, high-poverty students score lower than those who are not in poverty. To better understand and close these equity gaps, more detailed information is needed.

According to research, understanding spending at the school level – how much money is spent and what it is spent on – is a critical factor in improving student performance (Wenglinsky, 1998). Although the EEOA provides tools to measure student performance at the school level, the current school finance system does not track spending to individual schools but rather to school districts. In addition, measurements of school quality standards are not currently at the level of validity and reliability necessary for an analysis of equity issues. It is, therefore, difficult to draw direct relationships between student performance, school quality standards, and school spending.

For Future Analysis

In order to investigate the link between spending, school quality and student performance, a new financial accounting system would be required to measure spending by school rather than by school district. This would be a major undertaking and may be problematic given the misalignment between Vermont's varied systems of school organization and local school tax districts. Without such an accounting change, however, it will be far more difficult to measure direct relationships. It is also imperative, and an EEOA requirement that the Department develop and implement improved measures of the school quality standards.

Each of these issues is discussed in detail in the three major sections of this report:

- I. Education Finance
- II. Education Quality
- III. The Relationship of Education Finance and Quality

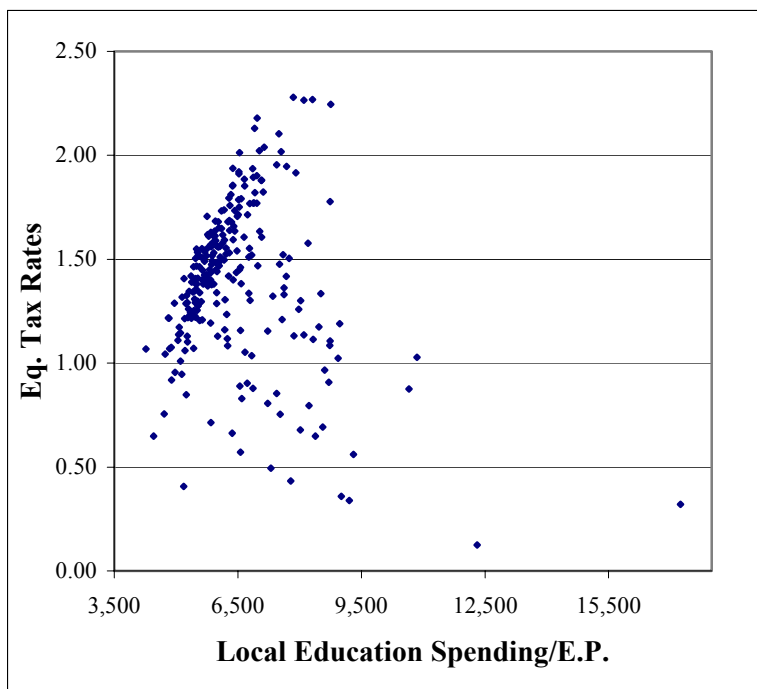
I. Education Finance

Tax Rate Inequities Leading to the *Brigham* Decision and EEOA

Education tax rates prior to EEOA were dependent on two factors – the level of spending and the property wealth of a town school district as measured by its grand list per pupil. In FY1998 (school year 1997 - 1998), the year before the first transition year of EEOA, tax rates in Vermont ranged from a low of \$0.12 to fund an per pupil¹ local education spending level of \$12,300 to a high of \$2.28 to fund \$7,850 in local spending. These figures reflect the disparities that were found unconstitutional in *Brigham* and that EEOA was designed to address.

Inequities could also be seen when two school districts spent the same amount per pupil. Districts could have widely disparate tax rates if one had a low grand list relative to the other while spending the same amount per pupil. As an example, two districts in FY1998 spending at the state average of \$6,200 per pupil had tax rates of \$1.08 and \$1.53 while two school districts spending \$6,600 per pupil had tax rates of \$0.83 and \$1.79. Figure 1 demonstrates the relationship between tax rates and spending prior to EEOA.

Figure 1: 1998 Local Education Spending per Equalized Pupil vs. Equalized Tax Rates



¹ Equalized pupil: In Vermont funding formulas, pupil counts are "weighted" for students in poverty, students with limited English proficiency, and for secondary students. This system has the effect of directing more revenues to schools with higher proportions of these types of students.

The EEOA Design

The EEOA created the Education Fund along with dedicated revenues. This greatly increased state funding for schools, from approximately a 30% state share in FY1998 to a 75% share in FY2001. State funding now consists of a grant for general support along with grant funding based on a percentage of cost for student transportation and special education. Meeting the EEOA mandate, state funding of special education has increased to 60% and additional revenues were made available to small schools. The general state support grant (GSSG, also called the block grant) for FY2001 is \$5,194 per equalized pupil and is projected to be \$5,383 for FY2002. State revenues to support education come from an increase in several existing taxes, as well as some new taxes, proceeds from the state lottery, a general fund transfer, and, most importantly, the statewide property tax.

Funding for pupils attending technical centers has also changed under EEOA and Act 138 of 1998. The block grant is now paid directly to the technical centers rather than to the town school district that previously sent the money to the technical centers as part of the total tuition bill. Technical centers now only bill districts for tuition above the GSSG. Another grant from the Education Fund is also provided to technical centers, based on the number of full-time equivalent students in attendance. Additional funding has also been provided for technical education pilot projects as well as capital construction and improvements for existing centers.

The EEOA addressed tax rate inequity by tying per pupil spending levels directly to equalized tax rates on a statewide basis. All taxpayers now have an equalized state education tax rate of \$1.10, regardless of whether the school district operates a school or has students. This is a statewide property tax all property owners pay (homeowners, business owners, residents, and non-residents) with the revenues going into the Education Fund to help fund the GSSG and state categorical grants each school district receives.

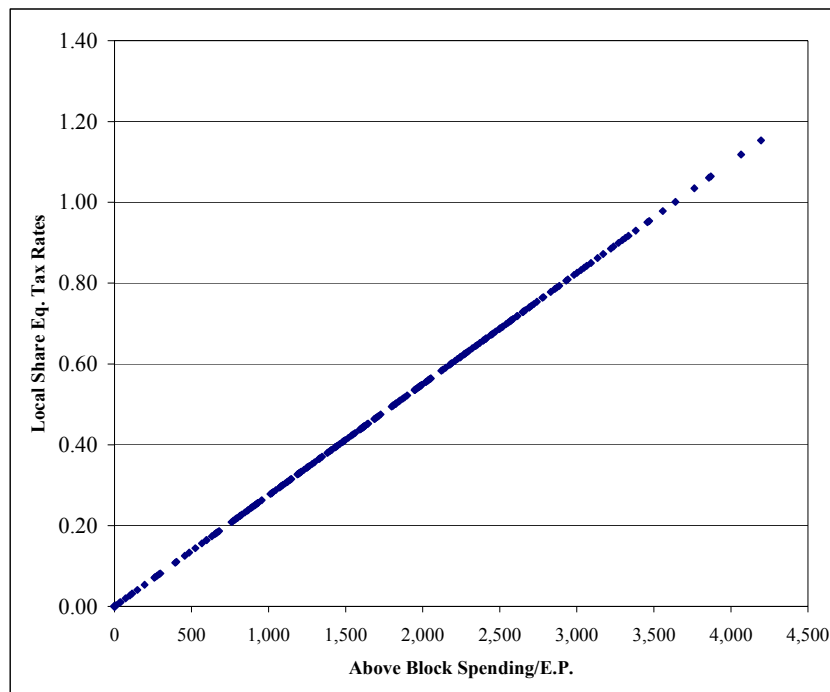
At school district meetings, most districts choose to spend above the block grant, which necessitates local share education tax rates in addition to the \$1.10 statewide tax rate. As Figure 2 shows, this per pupil spending above the block grant is directly tied to the local equalized tax rate. For the first time, any district spending above the GSSG has the identical equalized tax rate as any other district spending at the same level, regardless of grand list per pupil value. Two districts voting to spend \$1,000 per pupil above the GSSG in FY2001 have a local equalized tax rate of \$0.25 for a total rate of \$1.35, while two other districts choosing to spend \$2,600 above the block per pupil have a local rate of \$0.65, for a total equalized tax rate of \$1.75. If a district chooses to increase the level of per pupil spending, the tax rate goes up. The EEOA has ensured that the rate of increase or decrease for a tax rate is the same for every district in the state.

The Sharing Pool and Property Tax Adjustments

When a school district chooses a per pupil spending level above the GSSG, it enters the sharing pool. The sharing pool is the mechanism EEOA uses to ensure that all publicly educated pupils in every district have equal access to education tax revenues if the school district has spending above the GSSG. The purpose of the sharing pool is to remove inequities caused by raising a tax dollar based on local education grand lists.

For districts in the sharing pool, local education tax revenues are based on a statewide per pupil grand list amount (the predictable yield, formerly the equalized yield) rather than a local grand list amount. The effect of this provision is to give each school district the same grand list per pupil for above block spending. This has resulted in a grand list decrease in some towns and an increase for many school districts. With all school districts now having the same state grand list for taxing purposes, a given level of per pupil spending generates the same education property tax rates throughout the state. In other words, the law has now given every district the same tax base per pupil, equalizing the effort to raise a tax dollar.

Figure 2: Above Block Spending per Equalized Pupil vs. Local Share Equalized Tax Rates (FY2001)



Property tax adjustments were created by EEOA to help homestead owners pay their education property taxes. These adjustments were designed to work with a new renters' rebate program and the pre-existing tax cap for those taxpayers under a specific income level. Tax adjustments come either in the form of a prebate check received by eligible taxpayers 30 days prior to receiving their first tax bill or in the form of an adjustment when income tax returns are completed by April 15th of the following year. The adjustments tie property taxes to an individual's ability to pay, based on their income or a proportion of their property value.

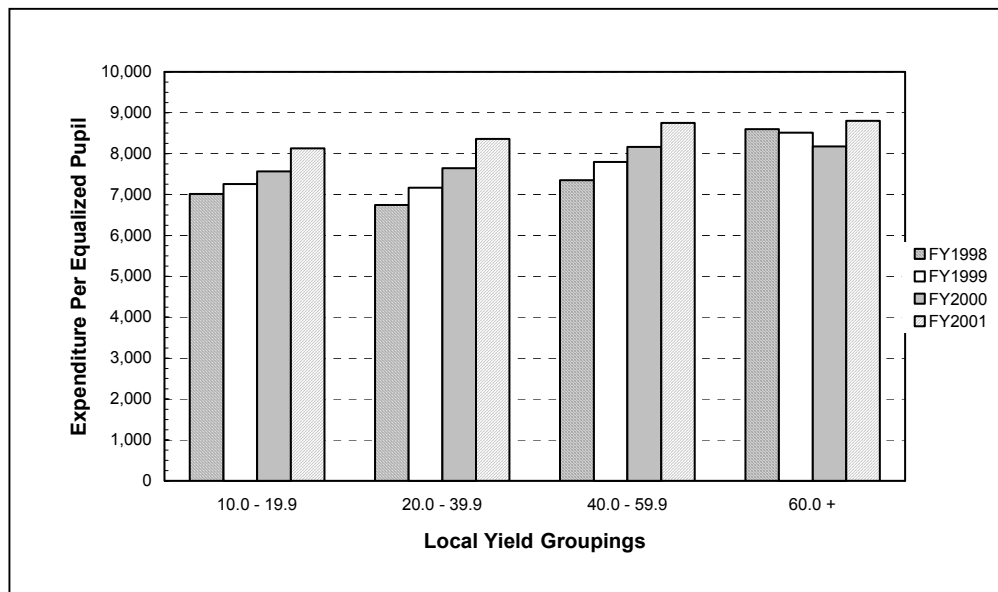
The sharing pool has created much of the controversy surrounding EEOA. As stated above, local share tax liabilities for districts are based on per pupil spending above the GSSG and the state property tax, with a given spending level resulting in identical local share tax rates for districts spending the same per pupil amount. Identical local share tax rates, however, raise different amounts of tax dollars in districts due to property wealth differences. The fact that some districts raise more local share tax revenues than are required for their above block

spending and send the difference to the sharing pool adds to the concern that some districts are raising more in taxes than local spending requires. But education is no longer funded locally, although the amount a town spends is a local decision. Both the statewide education tax and the local share tax are raised through a state system. Districts now act as agents for the state under EEOA, collecting the taxes from local taxpayers.

In separate school districts with the same per pupil spending above the GSSG, any two taxpayers with equivalent incomes and homesteads pay the same amount of education taxes since the tax adjustments place limits on the amount of tax paid. Although taxes are collected at the local level, no district in the state raises the exact amount of taxes required to fund its schools since districts do not fund education directly. It is only on a statewide level that the amount of local share tax revenues raised is equivalent to the amount of money necessary for above block spending. Individual taxpayers pay exactly what is required of them, based on budgets, property wealth, and tax adjustments.

The EEOA has accomplished its goal of providing equal access to education tax revenues for all publicly educated students in the state. Statewide, spending levels are uniformly tied to tax rates for the first time and eligible taxpayers are provided tax relief based on their ability to pay education property taxes. While it is too early to draw definitive conclusions, data collected since the implementation of EEOA suggest variation in per pupil spending between districts is narrowing (pages 22-23). Data also suggest low property wealth districts have increased per pupil spending at a faster rate than property wealthy districts. (Figure 3)

Figure 3: Budgets Per Equalized Pupil: Grouped by FY2000 Local Yields¹



¹ A "local yield" is the amount one percent of the statewide property tax raises per pupil for a school district. It is analogous to the predictable yield.

Table 1.1 displays the data in Figure 3 and illustrates the percentage change in budgeted expenditures per pupil for towns between fiscal years 1998 and 2001. Districts have been

grouped by local yields, which are a measure of property wealth per pupil. The data shown are the averages for the districts in each group. The group with the largest local yields (60 +) has the smallest percentage change over the four-year period (2.33%) while the other groups all have budget increases of over 15.0%.

Table 1.1: Budgets Per Equalized Pupil: Grouped by FY2000 Local Yields

Local Yields	FY1998¹	FY1999	FY2000	FY2001	Percent Increase FY1998 – 2000	Districts in Group
10.0 – 19.9	7,015	7,258	7,563	8,130	15.89%	17
20.2 – 39.9	6,742	7,166	7,644	8,359	23.98%	146
40.0 – 59.9	7,348	7,800	8,161	8,751	19.10%	44
60.0 +	8,601	8,515	8,177	8,801	2.33%	45

¹ FY1998 budget data are approximations

II. Education Quality

The EEOA takes a standards-based reform approach to improve learning for all students. In this approach, a set of student learning standards is developed and practices are aligned to support the widespread attainment of the standards. The student learning standards are called *Vermont's Framework of Standards and Learning Opportunities*, a document that is periodically updated.² The learning standards influence such broad areas as curriculum, instruction, student assessments and accountability.

Assessment

The *Vermont Comprehensive Assessment System* was originally adopted by the State Board in November 1996, with EEOA subsequently mandating school participation. Currently, students are assessed annually in early reading at grade 2 using the Vermont Developmental Reading Assessment, and in mathematics and English/language arts at grades 4, 8, and 10 using the New Standards Reference Examination. In addition, student portfolios are sampled each year at grades 4, 8, and 10 in mathematics and at grades 5 and 8 in writing to provide additional state-level information on student performance. Since the state component of the *Comprehensive Assessment System* cannot assess all the standards in *Vermont's Framework*, rules adopted pursuant to EEOA mandate that schools implement local comprehensive assessment plans. Most schools are moving toward completion of these requirements by participating in additional local portfolio scoring, administering other standardized assessments, or developing their own local assessments.

Other components of the state assessment system are still under development. The Vermont Science Assessment was administered in 1998 at grades 6 and 11 and in 1999 at grade 6. This assessment did not prove to be sustainable due to development and administrative costs. A new science test was piloted in the fall of 2000 and should be ready for inclusion as an annual assessment at grades 5, 9, and 11 in the fall of 2001. Social studies, originally envisioned as a statewide test, has not been implemented. The Department and State Board are currently studying whether to pursue statewide or local development.

Accountability

The EEOA includes two school accountability provisions. One holds schools accountable for student performance based on the *Vermont Comprehensive Assessment System* and the other on the *School Quality Standards*. The Commissioner of Education was required to hold schools accountable through transitional systems while final systems were being developed.

As the State Board of Education, a statewide committee, and Department staff deliberated on the components of the final accountability system based on student performance, the *Transitional Accountability System* was implemented. During school year 1998 - 1999, four low performing schools were identified for technical assistance based on their student assessment results from Spring 1998. After the State Board strengthened the criteria for identification, 39 low performing schools were identified in the 1999 - 2000 school year based on their Spring 1999

² In 2000, revisions of the history and social science standards were completed.

results. These schools have been receiving technical assistance from the Department of Education. School improvement coordinators have been working with identified schools on improving action plans. Expert teachers have worked to improve teaching practices and subject area content knowledge among school staff.

In July 2000, the State Board approved the *Vermont School Accountability System Based on Student Performance*. In the fall of 2002, schools will be reviewed for the first time under this system. At that point, accountability reports will be issued detailing each school's status and progress toward having its average score meet the state goal by school year 2007 - 2008. As the system is implemented, the consequences outlined in EEOA for low performance or insufficient progress in improving student performance will phase in. The first time a school can be reviewed for additional consequences beyond technical assistance will be in the fall of 2004.

The school quality components identified by law are found in the *School Quality Standards* that were adopted by the State Board in January 1999. Transitional accountability for the *School Quality Standards* was accomplished through school quality assurance surveys completed by each school and approved by the school's principal and superintendent. Through these surveys, the Department questioned schools about implementation of the *School Quality Standards*. In addition, Act 120 of 2000 provided that at any time in particularly serious circumstances, the Commissioner may identify a school as not meeting standards of quality. This occurred in 2000 when one school was identified as not meeting standards of school safety and learning climate. Improved measures of the *School Quality Standards* are currently under development and a system for this aspect of accountability should be in place by Spring 2002.

Action Planning

The action planning process is a key component of school improvement. Each year schools develop action plans through which they review state and local student performance results, identify weaknesses, and plan for improvement. Schools' action plans are approved annually by their boards. Although the Department of Education does not collect or approve each action plan, schools are required to submit plans to the Department if they are applying for some grant resources. When schools submit action plans, they are rated based on a scale of quality. The data from this process indicate that schools still have room for improvement in linking their areas of need to the action steps they propose. However, the overall quality of action plans is improving.

Curriculum Alignment

If students are to be assessed based on *Vermont's Framework*, it is important for schools to review their curricula to discover if any gaps exist. Tables 2.1 and 2.2 describe the progress schools have made toward "curriculum alignment." Table 2.1 shows that, although very few schools have completed work on nearly all areas, approximately two-thirds of schools have made some progress in over 60% of curriculum areas over the last two years. Reviewing Table 2.1, there is a small decline from 1999 to 2000. Issues of data validity and reliability may be a factor when reviewing these data. First, how accurately did principals and superintendents report their actual status? Schools may have categorized themselves higher in 1999 and realized in 2000 that

they were farther away from an aligned curriculum than they thought. Alternatively, for instance, a change in leadership at the school may show that the new principal describes the school differently than did their predecessor. These limitations reinforce the need for an improved system to measure the *School Quality Standards*. Although current data give us sufficient summary information, it is not of the quality necessary for use in effective action planning or accountability.

Table 2.1: Overall Curriculum Alignment, 1999 & 2000 -
Percentage of Schools

% of Framework Areas 'Aligned' or 'In Progress'	% of Schools (1999)	% of Schools (2000)
81%-100% of areas 'Aligned'	7%	7%
61%-80% of areas 'Aligned'	22%	12%
81%-100% of areas 'In Progress'	10%	19%
61%-80% of areas 'In Progress'	28%	25%
Total (61%-100% 'Aligned' or 'In Progress')	67%	63%

Source: School Quality Standards Assurance Surveys, 1999 & 2000

Table 2.2 shows that English/language arts and mathematics are the only areas where over 50% of schools have completed curriculum alignment work. This is not unexpected, as these two areas have been the only ones with consistent and sustained statewide assessments. In addition, the next highest area of completion was science, where 47% of schools have aligned curricula. Although not administered in 2000, a statewide science assessment was given in 1998 and 1999.

One of the ways schools are aligning their curricula and gaining additional classroom assessment information is through "standards-based" programs. Due to the support of organizations like the National Science Foundation (NSF), a large number of standards-based science and mathematics programs exist. Early results of two studies on a standards-based, high school mathematics program in Vermont are positive. One high school in 1998 and four in 2000 provided the Vermont Institute of Science, Mathematics, and Technology (VISMT) and the Department of Education with data on participation in the Interactive Mathematics Program (IMP).

In the studies, the performance of IMP students on the grade 10 New Standards Reference Exam in mathematics was compared to other students in their high school. These comparison groups were composed of students of similar gender, poverty, and pre-high school (grade 8) assessment scores. Although often not significant due to the small numbers of students involved in the studies, IMP students consistently outperformed non-IMP students in the one participating high school in 1998 and in three of four schools in 2000. While these results are encouraging, they are not conclusive. Continued research is needed on the implementation of standards-based programs to determine if they are truly making a difference and why are they showing more promise in certain schools than others.

Table 2.2: Completed Curriculum Alignment by Vermont Framework of Standards Area, 1999 & 2000 - Percentage of Schools

Framework Area		1999	2000
Arts, Language, and Literature	English/ Language Arts	52%	50%
	Arts	26%	32%
	Foreign Languages (all grade levels)	18%	21%
Math, Science, and Technology	Mathematics	57%	65%
	Sciences	31%	47%
	Technology Ed.	22%	22%
History and the Social Sciences	Social Studies	20%	25%
	History	20%	26%
	Geography	18%	25%
Other	Physical Ed.	18%	35%
	Family and Consumer Sciences	13%	17%
	Comprehensive Health	25%	24%
Vital Results	Communication	29%	38%
	Reasoning and Problem Solving	29%	37%
	Personal Development	24%	31%
	Civic/Social Responsibility	22%	27%

Source: School Quality Standards Assurance Surveys, 1999 & 2000

Local Assessment System

Another vital area in which schools are engaged is in developing local assessments to complement state assessments. State assessments sample a relatively small percentage of all standards and evidence in *Vermont's Framework* and currently do so in only four grades. Local assessments, therefore, are necessary to assure that students are becoming proficient in additional areas of the *Framework* across additional grade levels. Schools are required to have local assessment system plans in place by Fall 2001 and to have fully implemented them by Fall 2005.

Table 2.3 shows that, although very few schools have completed work on all areas, approximately one-half to two-thirds of schools have made some progress in over 60% of local assessment areas. Table 2.4 shows that English/language arts and mathematics, again, are the only areas where approximately 50% of schools have completed local assessment systems. As in curriculum alignment, the data must be interpreted with caution, but there appears to be increased school focus on creating local assessment systems.

Table 2.3: Overall Profile of Local Assessment Systems Progress, 1999 & 2000 - Percentage of Schools

% of Local Assessment Areas 'Completed' or 'In Progress'	% of Schools (1999)	% of Schools (2000)
81%-100% of areas 'Completed'	4%	4%
61%-80% of areas 'Completed'	22%	31%
81%-100% of areas 'In Progress'	3%	5%
61%-80% of areas 'In Progress'	24%	25%
Total (61%-100% 'Aligned' or 'In Progress')	53%	65%

Source: School Quality Standards Assurance Surveys, 1999 & 2000

Table 2.4: Overall Completion of Local Assessment System (including use of multiple assessment measures), 1999 & 2000 - Percentage of Schools

Framework Area		1999	2000
Arts, Language, & Literature	English/ Language Arts	41%	51%
	Arts	9%	12%
	Foreign Languages (all grade levels)	11%	10%
Math, Science, and Technology	Mathematics	40%	47%
	Sciences	27%	26%
	Technology Ed.	8%	8%
History and the Social Sciences	Social Studies	9%	14%
	History	8%	13%
	Geography	8%	16%
Other	Physical Ed.	26%	24%
	Family and Consumer Sciences	24%	23%
	Comprehensive Health	15%	16%
Vital Results	Communication	13%	11%
	Reasoning and Problem Solving	13%	19%
	Personal Development	6%	7%

Source: School Quality Standards Assurance Surveys, 1999 & 2000

Public Reporting

Increased communication with parents and community members is another key goal of EEOA. Table 2.5 shows that nearly two-thirds of schools are already reporting data on 81%-100% of all required elements of the *School Quality Standards* in their local school reports. Table 2.6 reports a more detailed version of the data. "Regional job opportunities" is one area of local reporting that high schools are currently not reporting with the same frequency as other information.

Table 2.5: Overall Profile of Local Public Reporting, 1999 & 2000 - Percentage of Schools

% of SQS Areas Reported	% of Schools (1999)	% of Schools (2000)
81%-100%of areas reported	58%	64%
61%-80% of areas reported	17%	16%
Total (61%-100% 'areas reported')	75%	80%

Source: School Quality Standards Assurance Surveys, 1999 & 2000

Table 2.6: Public Reporting, 1999 & 2000 - Percentage of Schools¹

School Quality Standards Reporting Area	1999	2000
Student performance data (Progress toward meeting student performance standards)	96%	96%
Health and social well being of children in the school district	73%	76%
Progress towards meeting annual goals of action plan	72%	87%
Other contextual information	74%	78%
Information about early reading	89%	92%
Early care and educational opportunities available to children	70%	77%
Community support to children	68%	72%
How students receive information about program offerings at technical centers	92%	85%
Student participation in technical education	87%	85%
Regional job opportunities	46%	57%
Follow-up information on graduates from the previous year	67%	73%

¹Certain areas are only applicable to elementary or secondary schools.

Technical Education

Students who participate in and complete technical center programs have been of particular concern to parents/community members, schools, and policy makers. The EEOA mandates that secondary schools offer "genuine access" to technical education. In order to begin to explore this mandate, two areas were analyzed for this report. Table 2.7 shows that students who complete technical center programs are more likely to have home high schools that are close, if not adjacent, to the technical center. Home high schools also have twice as many of their juniors and seniors complete a technical center program, compared with high schools that do not have technical centers in their facility or nearby.

Table 2.7: Access to Technical Education, 1999 & 2000

	Students <u>with</u> Tech Center or Voc. Program in Home High School¹	Students <u>without</u> Tech Center or Voc. Program in Home High School
Percent of Program Completers	60.2%	39.8%
Program Completers as Percent of 11 th & 12 th Home High School Enrollment	10.6%	5.3%

¹High schools with technical centers or vocational programs account for 41% of Vermont's juniors and seniors, while other high schools account for 59%.

Another component that is being analyzed for the first time is the performance of technical center students on the New Standards Reference Examinations (NSRE). The NSREs are administered statewide at tenth grade and the vast majority of technical center students do not begin technical programs until their junior year. When the tenth grade performance of junior and senior program participants is analyzed, one can see that technical center students have significant gaps compared with other students in both basic and analytic skills before entering technical center programs. (See Table 2.8) One can also see from the footnote to Table 2.8 that a high number of technical education students either did not participate or did not participate in a way that resulted in a valid, on-level score. Taking that piece of information into account, approximately one student in ten is meeting standards in any one assessment area before entering the technical center.

Table 2.8: Performance of Technical Education Students, New Standards Reference Exam (NSRE) - Grade 10, 1999

Assessment Reporting Area	Technical Education Students¹	State Averages
Basic Skills		
Reading: Basic Understanding	14%	46%
Writing Conventions	41%	76%
Mathematical Skills	16%	53%
Analytic Skills		
Reading: Analysis & Interpretation	12%	44%
Writing Effectiveness	9%	39%
Mathematical Concepts	9%	33%
Mathematical Problem Solving	7%	27%

¹Results represent 290 Technical Education students with valid NSRE scores in reading and writing and 302 with valid NSRE scores in mathematics. An additional 70 students in reading and writing and 114 in mathematics are not included due to invalid scores (blank, incomplete, modified or out-of-level).

Student Performance

In general, Vermont students and schools perform at relatively high levels in the areas termed "Basic Skills" on the New Standards Reference Exams (NSRE) and the Vermont Developmental Reading Assessment, but not as well in areas known as "Analytical Skills" on the NSREs. This has been a trend at the school, supervisory union, and state levels for all three years in which the assessments have been administered. As Table 3.1 shows, at least 50 percent of students met or exceeded the Vermont standards of proficiency in nine of ten basic skill areas in 1999 and 2000, while students met this threshold in only three of twelve analytical skill areas. In most areas it can also be seen that the percentage of students meeting or exceeding standard decreases as students move through the system, particularly in the fundamental area of basic reading.

Despite the basic/analytical performance differences, overall performance tends to be on the rise. At grades 4 and 8 where two years of assessment data from the voluntary years (1996 and 1997) and first mandatory year (1998) exist to compare, nine of fourteen areas in Table 3.1 show improving performance by 1999 and 2000.

Table 3.1: Student Performance¹ by Skills Area (1999 & 2000 combined)

Assessment Reporting Area	Grade 2	Grade 4	Grade 8	Grade 10
Basic Skills				
Vermont Developmental Reading	74%	N/A	N/A	N/A
Reading: Basic Understanding	N/A	84%	60%	46%
Writing Conventions	N/A	50%	56%	75%
Mathematical Skills	N/A	68%	67%	54%
Analytic Skills				
Reading: Analysis & Interpretation	N/A	66%	30%	43%
Writing Effectiveness	N/A	61%	59%	39%
Mathematical Concepts	N/A	38%	31%	35%
Mathematical Problem Solving	N/A	35%	42%	28%

¹ Percentages indicate percentage of students meeting or exceeding the standard.

Equity with Respect to Student Performance

With respect to student performance, equity is defined as the relative absence of group differences when student performance is analyzed by gender, family background, race and ethnicity, or any other characteristic that is not related to academic achievement. This type of equity can be studied on two levels, between schools and within schools. "Between schools" compares data of two or more schools, while "within schools" compares data from different pupil groups in a single school.

An equity question related to poverty between schools is, do schools in communities with relatively low poverty generally perform better than schools in communities with high poverty? As Table 3.2 demonstrates, schools in communities with low poverty outperform schools with relatively high poverty in all assessment areas across all grade levels. This profile remained relatively consistent overall when comparing results from pre-EEOA to the most recent data.

Gaps in reading and writing remained the same or became smaller while gaps in mathematics generally increased. It is difficult to attribute either of these changes to EEOA. As previously stated, the EEOA financing formula was not fully implemented until the 2000-2001 school year and no student performance information yet exists for this year. In addition, certain unique issues may exist in the 1996 through 1998 data that reflect the voluntary years of participation and the first year of mandatory testing. Lastly, the Department is unable to link the financing effects of EEOA to this question of equity due to the fact the education finance system does not tie funds directly to individual schools, thereby not making detailed analysis of equalizing effects viable.

Table 3.2: Student Performance Gaps by School Poverty (1999 & 2000 combined) - Gap between the percentage of students meeting or exceeding the standard in high and low poverty schools.¹

Assessment Reporting Area	Grade 2	Grade 4	Grade 8	Grade 10
Vermont Developmental Reading	-10%	N/A	N/A	N/A
Reading: Basic Understanding	N/A	-10%	-10%	-16%
Reading: Analysis & Interpretation	N/A	-17%	-9%	-16%
Writing Effectiveness	N/A	-14%	-7%	-17%
Writing Conventions	N/A	-14%	-10%	-18%
Mathematical Concepts	N/A	-16%	-13%	-17%
Mathematical Skills	N/A	-15%	-13%	-15%
Mathematical Problem Solving	N/A	-14%	-13%	-16%

¹ The average poverty rank of the schools in each group is based on a two-year aggregation of the Goals 2000 Poverty Indicators Summary Report. Schools received an overall rank based on their relative rank in: (1) % Free & Reduced Lunch, (2) % Food Stamps, (3) Average Income. Schools were considered "high poverty" if they ranked among the one-third highest poverty schools and "low poverty" if they ranked among the one-third lowest poverty schools. The number of high poverty and low poverty schools in each group is approximately 80 at Grade 2 & 4, and 45 at Grade 8, and 20 at Grade 10.

Within schools, significant patterns emerge when student performance results are analyzed by student characteristics. For example, females as a group outperform males significantly on the Vermont DRA and in all areas of reading and writing in each of the three grade levels of the NSRE. Although statistically significant gaps exist between females and males at all levels, the smallest gaps occur in reading areas at grades 2 and 4.³ (See Table 3.3) Currently, very few schools are breaking these trends in even one assessment area. An even smaller number of schools are achieving above state averages (excellence⁴) with no performance gaps (equity). (See Table 3.4).

³ There are not gender gaps on the NSRE in mathematics, but gaps do exist on the SAT that favor males. Although not detailed in this report, this is an equity issue that will be investigated by the Department.

⁴ In certain assessment areas, state averages may not reflect high performance (e.g., only 46% of grade 10 students meet or exceed the standard in basic reading)

Table 3.3: Student Performance Gaps in Reading and Writing by Gender: ¹
(1999 & 2000 combined)

Assessment Reporting Area	Grade 2	Grade 4	Grade 8	Grade 10
Vermont Developmental Reading	-9%	N/A	N/A	N/A
Reading: Basic Understanding	N/A	-4%	-16%	-17%
Reading: Analysis & Interpretation	N/A	-7%	-15%	-17%
Writing Effectiveness	N/A	-17%	-21%	-20%
Writing Conventions	N/A	-17%	-19%	-19%

¹ Gap in the percentage of students meeting or exceeding the standard for male students as compared to female students.

Table 3.4: School Level Analysis of Gender Differences in Reading and Writing (1999 & 2000 combined)

Area	# of Schools with at Least 30 Students in Each Group ¹	# of Schools without Performance Differences ²	# of Schools without Differences also Performing Above State Averages ³
Grade 4			
Reading: Basic Understanding	78	32	15
Reading: Analysis & Interpretation	78	25	13
Writing Effectiveness	78	3	2
Writing Conventions	78	4	3
Grade 8			
Reading: Basic Understanding	71	8	2
Reading: Analysis & Interpretation	71	9	1
Writing Effectiveness	71	1	1
Writing Conventions	71	5	2
Grade 10			
Reading: Basic Understanding	54	2	0
Reading: Analysis & Interpretation	54	2	1
Writing Effectiveness	54	3	0
Writing Conventions	54	3	2

¹ At least 30 females and males with valid assessment results in 1999 & 2000 aggregation.

² Performance differences are defined as less than 5% on the NSRE

³ State averages may not reflect high performance.

With respect to race and ethnicity, although Vermont's student population is only three percent minority, the racial and ethnic achievement gaps that are found in areas that are more diverse are also present in Vermont. In general, Asian and white students outperform other racial and ethnic groups. (Table 3.5)

Table 3.5: Student Performance Gaps by Race/Ethnicity¹ (1999 & 2000 combined)

Assessment Reporting Area	Grade 4	Grade 8	Grade 10
Reading: Basic Understanding	-7%	-11%	-11%
Reading: Analysis & Interpretation	-12%	-8%	-12%
Writing Effectiveness	-11%	-13%	-11%
Writing Conventions	-11%	-11%	-11%
Mathematical Concepts	-11%	-16%	-16%
Mathematical Skills	-10%	-15%	-20%
Mathematical Problem Solving	-14%	-15%	-16%

¹Gap in the percentage of students meeting or exceeding the standard for African-American, American Indian/Alaskan Native, Hispanic/Latino, and Native Hawaiian/Pacific Islander students as compared to White and Asian students. Number of Minority Students: Grade 4, ELA-N=329, Math-N=322; Grade 8, ELA-N=336, Math-N=350; Grade 10, ELA-N=329, Math-N=253

Student performance gaps are largest and most troubling in Vermont when considered by socioeconomic indicators such as lunch assistance and parents' education level. On every measure of student performance, the differences at the state level in student performance range from 15 to 27 percent in favor of students from relatively higher income families and whose parents have relatively higher education levels. (Tables 3.6 and 3.7)

Table 3.6: Student Performance Gaps by Poverty¹ (1999 & 2000 combined)

Assessment Reporting Area	Grade 4	Grade 8	Grade 10
Reading: Basic Understanding	-15%	-19%	-22%
Reading: Analysis & Interpretation	-24%	-15%	-21%
Writing Effectiveness	-22%	-19%	-21%
Writing Conventions	-23%	-21%	-25%
Mathematical Concepts	-21%	-18%	-18%
Mathematical Skills	-20%	-21%	-20%
Mathematical Problem Solving	-20%	-21%	-16%

¹Gap in the percentage of students meeting or exceeding the standard for students in poverty (receiving free or reduced lunch or milk) as compared to those students not receiving lunch or milk assistance.

Table 3.7: Student Performance Gaps by Parents' Education Level¹ (1999 & 2000 combined)

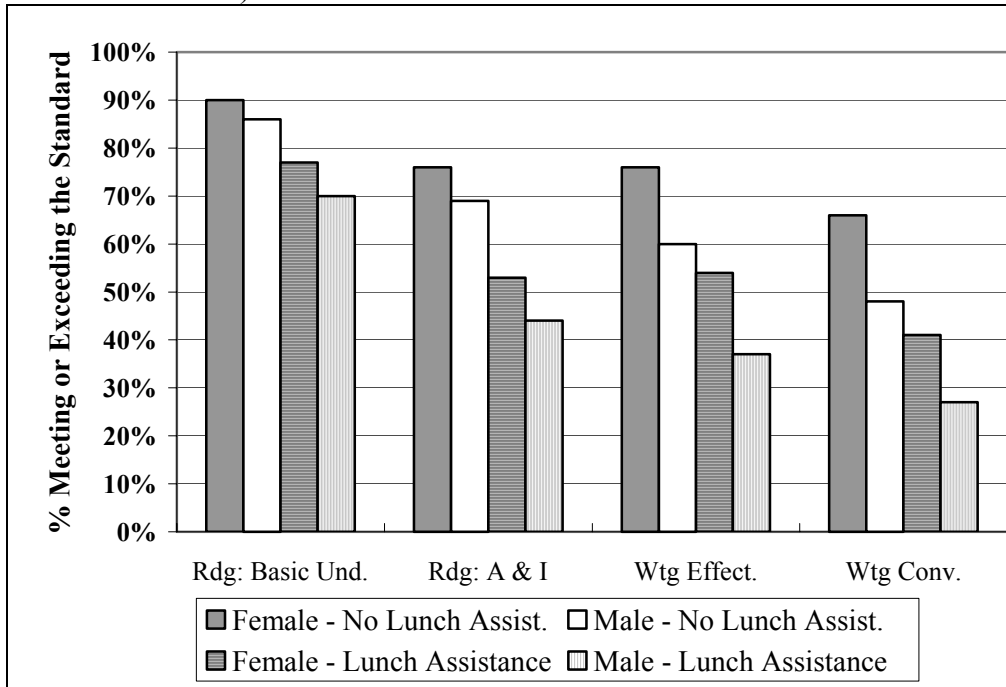
Assessment Reporting Area	Grade 8 ²	Grade 10
Reading: Basic Understanding	-21%	-26%
Reading: Analysis & Interpretation	-16%	-27%
Writing Effectiveness	-18%	-24%
Writing Conventions	-22%	-18%
Mathematical Concepts	-24%	-25%
Mathematical Skills	-22%	-26%
Mathematical Problem Solving	-27%	-22%

¹ Gap in the percentage of students meeting or exceeding the standard for students whose highest educated parent has a high school diploma or less as compared to those students whose highest educated parent has some college education or higher.

² No grade 4 data are available for this category.

When students are members of more than one low performing group such as low-income males, the differences between groups are even more pervasive and striking. For example, as Figure 4 shows, the difference in certain areas of reading and writing at grade 4 between low income males and relatively high income females is nearly 40%. These trends remain in grades 8 and 10 as well.

Figure 4: Student Performance Gaps by Gender and Poverty - Grade 4 (1999 & 2000 combined)



A very small number of schools do not follow this pattern and are able to attain excellent overall performance despite high community and school poverty levels. These schools have one common characteristic - they are relatively small. Although the overall performance of these handful of small schools appears to be positive, not enough data are available to look at equity gaps in each assessment area due to their size. (The analysis in Table 2.4, for instance, was restricted to schools with at least 30 students in each comparison group. Most small schools need four or more years of data before 60 or more students have been assessed.) As more data become available the Department will investigate whether within school equity gaps have actually been eliminated.

Concerned about the general viability of small schools, the EEOA mandated a small schools study that was initially conducted in 1998. That study, its follow-up, and additional data for this study uncovered important trends that mirror national research⁵. Vermont's small elementary and middle schools appear to have a mitigating effect on poverty. In other words, small schools are the only ones where higher poverty is not always directly related with lower performance. At the elementary, middle, and high school levels, small schools generally had the highest performance for all students except for non-poverty students at grade 10. Those students performed the highest at large schools. The smallest gaps between students of low socioeconomic status and those with students of relatively high socioeconomic status, however, existed at small and medium-sized, schools. The largest gaps were always at large elementary, middle, and high schools.

What Should be Done to Determine Whether EEOA Is Having “Equalizing Effects” in Relation to Student Performance and School Quality

Determining relationships between changes in the quality of school programs and student performance will depend on the ability of the Department of Education and local schools to collect accurate and comprehensive data on student performance and changes in school programs. Extensive research on school effectiveness has shown that relationships are influenced by qualities of leadership and organization, the quality of teachers and instruction, family background and parental involvement, political climates, and the amount of funds and their use. (Sudlow, 2001) It is clear that when measures of school quality accurately describe how teaching and learning take place and when learning outcomes are valid and reliable, strong relationships emerge. What is needed in Vermont in order to study these relationships is a system of data collection, analysis, and reporting, with at least the following components:

- a more comprehensive student data collection system that enables the tracking of student-level information such as student assessment results, enrollments from one school to another, and student grade completion and graduation rates (the Department anticipates that this system will be in place by 2004);
- an integrated state and local assessment system that enables the study of groups of students as they progress in schools;
- on-going documentation and case study of schools identified to receive mandatory technical assistance;

⁵ National research generally shows that small schools benefit all students except, at times, high socioeconomic students.

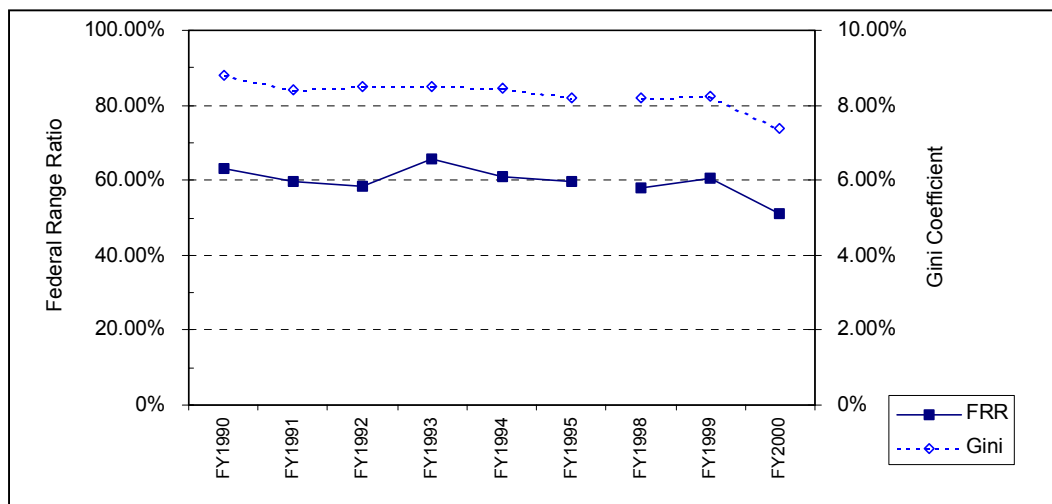
- a reliable, valid, and regular review of the implementation of the *School Quality Standards* from a survey of parents, students, teachers, administrators, and other members of the school community; and
- a comprehensive program measuring schools' progress on *School Quality Standards*, to be completed by schools and evaluated by the Department.

III. The Relationship of Education Finance and Quality

Historically, variations in per pupil spending have been compared among districts. These data were used by the Vermont Supreme Court in the *Brigham* decision that led to the passage of EEOA. Data were collected at the town school district level since the town was the taxing entity. Spending information was derived from a statutory definition of current expenditures, which was repealed in 1997 with the adoption of EEOA. Statistics based on these data were used to measure the variation among districts and were published through FY1995.

The Department of Education has estimated current expenditures using the pre-EEOA definition for FY1998 through FY2000 from data submitted by the districts. The same statistical formulas used prior to EEOA to measure variation in spending among districts (the Federal Range Ratio and the Gini Coefficient) have been applied to these estimated data to provide a continuum for determining the effects of EEOA. Figure 5 shows the variations between districts as measured by the Federal Range Ratio and the Gini Coefficient based on the estimates.⁶

Figure 5: Variation in Current Expenditures, FY1990-FY2000¹ (As measured by the Gini Coefficient and the Federal Range Ratio)



¹ Data are not available for FY1996 and FY1997. FY1998-FY2000 are estimates.

A decline is shown as a general trend in both statistical measures. In either measurement, a decline in the statistic shows a decrease in spending variations between districts. (The gap shown reflects no calculation of either statistic for fiscal years 1996 and 1997.)

The Department is developing another approach to determining cost per pupil to be used as a method of comparison. This method, known as Total Educational Spending by Town (TEST), allocates all federal, state, and local revenues back to a pupil's district of residence to estimate a local per pupil cost. It has been applied to spending data from FY1998 forward to provide an overlap between the pre-EEOA and EEOA systems. Table 4.1 shows the results of the Federal Range Ratio and the Gini Coefficient when applied against the TEST.

⁶ The Federal Range Ratio and Gini Coefficient are measures of variance in expenditures (equity). Decreases in these statistics indicate that differences between districts with high and low expenditures are decreasing.

Table 4.1: Variation in Per Pupil Spending FY1998-FY2000¹

Measure	FY1998	FY1999	FY2000
Federal Range Ratio	55.91%	66.33%	51.25%
Gini Coefficient	7.62%	8.97%	7.12%

¹These measures of FY1998 were applied to figures available prior to the implementation of EEOA. FY1999 and FY2000 are the first two years of transition under EEOA.

Variations in per pupil spending as measured by TEST show a decrease between FY1998 and FY2000, although an increase is noted in FY1999. FY1999 was a transition year for the implementation of EEOA with “soft-landings” in place to mitigate drastic increases in property tax rates for districts that had had low tax rates. Money was also provided to districts with very low local yields as a one-time boost in aid. Data for FY2001 will not be available until December 2001 to investigate whether a trend is beginning to develop.

Federal dollars raise an equity issue because they are not included in data collected for EEOA and are a significant source of revenue for school districts. In FY2000, approximately \$65,000,000 in federal revenues were spent in Vermont. It is likely that the application and impact of federal dollars differ significantly from district to district and have significant implications for financial equity and educational outcomes. As an example, two districts may have significantly different expenditures per pupil based on budgets, with the higher property wealth district having a greater per pupil spending figure. However, if the lower property wealth district has a lower socioeconomic level than the other district, it receives a greater proportion of federal dollars. When federal dollars are included in the total dollars spent per pupil, a lower property wealth district may actually be spending more per pupil.

The TEST is designed to account for all dollars a school district spends on its pupils. It is only by including all resources that an accurate portrayal of per pupil spending can be determined. This issue also underscores the need for a financial data collection system at the school and classroom levels, since student performance is measured there.

Challenges in Determining the Impact of Education Finance on School Quality and Student Performance

The primary challenge is the extent to which it is possible to link money spent to student outcomes. At the school level, EEOA has provided for measures of school performance through the *School Quality Standards* and student assessment results, while at the town level EEOA measures equal opportunity to education tax revenues. A review of the literature has shown that a critical issue for improving student performance is not only the amount of money that is spent in a school district but also how that money is spent. For example, spending money in specific areas such as direct instruction and professional development has been shown to be effective in improving school and student performance.

It is imperative to understand both "between" and "within" school measurements when looking at equity issues, as they measure different concepts. When reviewing differences between schools, the distribution of resources is being measured, or, in simpler terms, how much money is being

spent from school to school. Differences within schools measure other, but equally important questions – how are available resources utilized to improve educational opportunities for pupils in categories that have historically performed less well? In other words, how is the money being spent and influencing practices affecting individual pupils in the classroom? The within school equity questions cannot be answered without measuring the learning opportunities available to socioeconomically deprived pupils. These answers that can only be provided by analyzing within school data. A new financial accounting system at the school and classroom levels, linked to student assessment results and school quality, is needed to understand these questions.

Literature Review Summary

Known as “production-function research,” the study of the relationship between spending and performance has produced mixed results. Perhaps the most widely quoted study of this issue is the *Equality of Educational Opportunity Study*, also known as the Coleman Report (1966). Coleman concluded that student demographic characteristics accounted for most of the variance in student performance, leading many policy makers to conclude that the quality of school programs and levels of expenditure had far less effect on the outcomes of schooling than student characteristics. Other researchers, such as Armor (1972) and Edmunds (1979), found that under certain conditions schools and school programs could alter patterns of pupil achievement.

Probably the clearest example of conflicting results emerges from the works of Hanushek (1989, 1994, 1996, and 1997) and Hedges and colleagues (1994, 1996, and 1996). These two sets of research studies reached opposing conclusions. Hanushek concludes that there is not a direct relationship between expenditures and school quality or performance, while Hedges *et al.* present the view that there is a direct relationship. Both sets of research reviewed large numbers of studies conducted over a 30-year period, but Hedges *et al.* acknowledge that relationships, when found between spending and performance, are weak.

Wenglinsky (1998) identifies several limitations of analysis that are relevant to Vermont’s investigation of the relationship between spending and performance. First, he observed that prior studies have not distinguished among different types of spending (*e.g.*, transportation, administration, salaries, and other school and classroom level expenditures.) Second, regional variations in costs were not taken into account. Third, after the Coleman study, most studies tended to be limited in scope and did not account for demographic variables.

By accounting for different types of spending along with regional variations, Wenglinsky was able to demonstrate that student performance was moderately related to spending at the school level. Further, in testing the specific hypothesis that school spending could affect the social distribution of student performance at grade 12 (*i.e.*, differing achievement patterns by family background) he found that distributions were influenced by spending patterns within schools but not between schools. For example, some schools obtained both excellence in student performance and equity among groups by concentrating on certain school programs.

Wenglinsky (1998) makes the following recommendations to policy makers based upon his examination of the problems studying the relationship between pupil and school performance and expenditures:

- collect school-level finance data and relate them to student achievement;
- control for the effects of attrition due to mobility and dropouts;
- continue to refine the measures of family background to make them more reliable;
- consider that the relationship between pupil performance and finance at the school level may not be direct and statistically control for this possibility;
- consider that the relationship between pupil performance and finance at the school and state level may be related to the length of time that changes in educational policy and practice are in place. It may be that patterns of association that are hidden in one-year studies may emerge after two or more years;
- consider what expenses might be related to quality at the school level and make sure that their measures are reliable and valid (*e.g.*, salaries, administration, transportation, materials, capital expenses, etc.); and
- include, in the model which attempts to predict the relationship between performance and finance, a robust measure (*i.e.*, one that will determine how money is spent) of school program quality.

The Vermont Experience

In Vermont, very little about the relationship between spending, school quality, and student performance is known at present. Case studies suggest that when resources are applied to problems of curriculum misalignment, school organization, lack of teacher knowledge, or low expectations of students, performance improves. It seems likely that the relationships observed in the case studies should be evident in many schools, but there is no direct evidence at present.

The Department analyzed existing data as closely as possible to the Wenglinsky model. Financial data on "direct instructional expenditures" at the school district level is the closest the Department can currently get to school program-level expenditures. By eliminating districts that operate more than one school and only analyzing grade configurations with sufficient numbers of schools ("K-6" and "K-8"), the financial data are collected theoretically at the school level and can be related to student performance, but problems remain. As described earlier in this document, the financial data are still at a summary level and do not reflect expenditures targeted at a specific area. In addition, issues such as inconsistent reporting from district to district remain. Given these limitations, the relationship between expenditures and student performance based on these aforementioned measures is generally not significant.

A February 2001 study, *A Reasonably Equal Share: Educational Equity in Vermont*, by the Rural School and Community Trust, found that significant correlations existed between spending and achievement in both 1998 and 2000. The report describes important caveats to the analysis in its appendices, but indicates that one achievement gap may be decreasing. Given the data used for the analysis, some additional important caveats remain. The report uses K-12 town school district local education spending (LES) data, not the actual school level expenditures, and relates it only to fourth grade student performance. (See Page 27-28 herein for a description of the limitations of LES data.)

One has to be extremely cautious drawing conclusions on data that relate K-12 town school district spending to student performance represented only by fourth grade performance in two of five proficiency levels. As described above, when the Department of Education used a similar methodology but used data closer to the school level, reflected actual expenditures, controlled for grade configuration, and utilized student performance results from all applicable grades and all proficiency levels, the correlations almost totally dissipated. Given the fact that neither analysis of Vermont financial and student performance data meets the standards outlined by Wenglinsky, caution must be used when interpreting results.

As previously stated, schools are evaluated for school quality and student performance at the school level, but financial data cannot be gathered at a school level with the collection system as it is currently structured in Vermont. Financial data are reported to the Department at a school district level, which may incorporate pre-kindergarten through twelfth grade as well as union school and supervisory union expenditures. A new financial system would have to be developed to allow the collection of financial data at a school level. The system would need enough capacity and detail to track how money is spent at the instructional level. This is the level of detail necessary to link dollars with student performance.

Developing such a system will require major changes in state and local education accounting systems. Districts currently operate the same educational programs at different levels, some at the supervisory district level, others at the school level, while other schools may share the cost of a program. Data reporting must be consistent among districts throughout the state. There are wide varieties of financial practices and governance within the state, presenting many difficulties to overcome in the development and implementation of such a system. The following is a partial list of issues to address:

- districts and supervisory unions spend funds differently;
- districts report the same types of expenditure differently;
- expenditure data are collected at the school district level that includes union school districts, interstate school districts, and supervisory unions;
- financial data for EEOA grant and tax rate determinations are maintained at the town school district level;
- town school districts may allocate money to their schools by methods that are not consistent among districts; and
- such a system will place a considerable new burden on school officials.

The Department will need input and guidance on the purposes for which the data will be used in order to propose a system design. It would be important to examine the efforts of other states that collect data at this level, as well as receive input from business managers, superintendents, and other interested parties. The design and implementation of such a system raise a series of questions:

- Should all expenditures be collected at the school level?
- Should data be collected at the level of individual grades?
- Should data be collected by subject area?
- Should teacher and staff salaries be broken out by grade level and subject?

- How should expenditures for support services be allocated (guidance, nurse, library, accounting costs, etc.)?
- How should expenditures for supervisory union services be allocated?
- Do school level reports need to link data directly to the format as reported by the town school district for the *Annual Statistical Report of Schools*?

Limitations of Analysis Using Local Education Spending (LES)

Without school level accounting, the Department can only analyze expenditures per pupil at the school district level. Several additional issues currently make it difficult to obtain a clear answer on whether there have been educational quality effects of the education finance changes caused by EEOA. First, school budgets are the basis of EEOA calculations, but budgets as approved at school district meetings were not collected by the Department prior to FY1999, the first year of EEOA's phased-in implementation. Therefore, no comparable budget data exist for years prior to EEOA.

Second, local education spending (LES) is the amount of money a district spends on its pupils that is supported by the general state support grant (GSSG) and local share taxes, as well as any money from the sharing pool, if necessary. Local education spending (LES) data are the numbers EEOA uses to calculate local share tax rates⁷. These data would seem to be a likely source of comparison for the effects of EEOA since its implementation in FY1999. Although these data did not exist prior to FY1999, a gross approximation as to their value has been made for FY1994 through FY1998. However, even reviewing LES numbers from FY1999 forward will not give an accurate picture as to the equalizing effects of EEOA on school financing. FY1999 was a transition year with "soft landings" in terms of tax rate increases for districts that previously had low tax rates. Therefore, spending decisions for those districts may not have been seriously influenced that year. In FY2000, another transition year for school finance, statewide tax rates were still approaching the \$1.10 level, but the yield and sharing pool were in effect as provided for by EEOA.

It is only in this current year, FY2001, that EEOA has been in full effect, with all districts having a statewide tax rate of \$1.10. However, in FY2000 and FY2001, privately raised and donated dollars have been used by many districts to reduce LES levels, both in districts that receive money from the sharing pool and those that pay money into the pool. In FY2000, 44 districts reported \$7.8 million in private donations while 46 districts reported \$11.1 million in FY2001. Because these funds are not included in LES, they have had the effect of masking the impact of EEOA on many districts. Extensive private fund raising has allowed some districts to postpone making spending decisions that could adversely affect their schools, pupils, or taxpayers.

Third, as stated above, budget data for the 318 publicly funded schools in Vermont are collected and reported to the Department of Education at the town school district level rather than at the school level. Education tax liabilities are set based on these school district data, although by statute, it is the municipality that is the taxing authority. Only the municipality may collect taxes, precluding the specific allocation of tax dollars per pupil at the school level. Tax liabilities are netted against the GSSG and other general state aid for education to school districts, with the

⁷ Local Education Spending (LES) = budgeted expenditures – local revenues

net amount being sent to the school district or as a payment to the sharing pool for districts spending above the GSSG. The money is then disbursed from the town school districts to the individual schools.

Fourth, there are wide varieties of school type, grade configuration, and school size within Vermont. (See Figure 5.) Some districts operate no schools and allow parents to choose where their children attend classes, others operate a K – 12 system, while still others may operate a K – 8 school and pay tuition on behalf of their 9 – 12 students elsewhere in accordance with law. Other districts may operate some level of elementary school and belong to a union high school, while still others may be part of both a union elementary and high school. These combinations make it difficult to gather financial data at a school level and report at a town school district level, especially when the school is a union school. It is difficult from a union school's perspective to assess detailed financial data back to the member districts other than at a gross level.

Figure 5: Vermont School Districts: Variations in Type, Size, and Grade Configuration

	Small S <100 E.P.*	Medium 100<=M<500*	Large 500<=L<1,000*	X-large XL >= 1,000*	Total
Number of Town Districts that					
Do not operate a school, tuition all students	14	1	-	-	15
Operate public K-12 or belong to unified K-12 school	-	15	9	8	32
Belong to a unified union district	1	8	-	-	9
Belong to a K-12 interstate district	-	3	1	-	4
Operate elementary school, tuition high school students	10	40	4	1	55
Operate elementary school, designated high school	-	1	-	3	4
Operate elementary school, belong to a union H.S.	8	68	21	11	108
Belong to a union or joint elementary, tuition high school students	5	6	-	-	11
Belong to a union or joint elementary and a union high school	3	5	3	-	11
Do not operate elementary, but belong to a union H.S.	2	-	-	-	2
Gores and unorganized towns	9	-	-	-	9
All towns, gores, & unorganized towns	52	147	38	23	260

Finally, there are also differences in the methods supervisory unions use to provide and pay for district-wide services. Some operate certain services out of the central office while others may have staff and services in specific schools. Still others share resources among schools.

Expenditure per Pupil Alternatives

There are several potential alternatives for monitoring per pupil expenditure data over time. Each alternative has its own set of drawbacks.

1. Budgeted expenditures as submitted by June 1st of each year are the most current and accurate portrayal of what districts intend to spend on their pupils, but do not count all dollars that will be spent. Federal dollars are generally excluded as are food services. However, not every district reports data the same way and some include federal and food dollars. Budgets may vary widely within a district from year to year due to special education costs. Also, districts that have a large number of tuition students count those expenses in their budget but do not count those students in their local school district count, artificially increasing their budget per pupil amounts. For these and other reasons, a comparison of budgets per pupil may not be accurate.

2. Current expenditures per pupil may be extracted from the *Summary of the Annual Statistical Report of Schools*, a compilation of district reports submitted to the Department of Education by August 15th, following the close of the prior school year. These data are the actual expenditures made by each school district and exist for years prior to EEOA. They incorporate special education and transportation costs, but exclude community service, adult education programs, capital outlay and equipment, and more critically, long-term capital debt service. Capital debt service is included in the expenditures for the EEOA calculation and may play a large role in the local tax liability a district must address. Data for current expenditures are collected at the school district level that includes union schools, joint contract districts, and unified union schools. These school district types are not recognized as school districts under EEOA. Statistical data are also reported by the federal definition of full-time equivalent pupil counts, which are for the entire school year and include both resident and non-resident pupils.
3. Actual expenditures for direct instruction per pupil can also be extracted from the *Summary of the Annual Statistical Report of Schools*. Actual expenditure data for years prior to EEOA are available and would allow the flow of dollars to be monitored for changes in spending patterns. However, as with the other statistical report data, these expenditures are reported by full-time equivalent pupil counts for the entire school year and include both resident and non-resident pupils. They are also collected at a school district level under the definition that includes union and other schools, not the EEOA definition, so not all expenditures are assessed back to member districts.
4. A new method of assigning costs per pupil is currently under development by the School Finance section of the Department of Education. This method, discussed earlier, is referred to as the TEST per pupil, where TEST stands for “Total Educational Spending by Town.” The TEST method has emerged from a study of the problems inherent in allocating expenses on a per pupil basis, but requires further study before equalizing effects questions may be answered. TEST is an attempt to allocate all federal, state, and local expenditures back to a pupil’s district of residence for those pupils educated at the district’s expense.

Included in this allocation back to the district of residence are costs associated with supervisory unions, union and joint schools, and technical centers. Costs for adult education, community services, and payments to the sharing pool are not included in TEST as they are not used by districts for educational expenses of their residential pupils. An underlying assumption of allocations used in TEST is that each pupil has equal benefit of all grants to the school district. Total district costs are divided by the average daily membership (ADM) of the relevant year to reach a per pupil cost.

IV. Conclusions and Recommendations

Conclusions

These equalizing effects of the EEOA have been documented during the first full year of implementation:

- The EEOA has eliminated the wide variation in tax rates that were previously based on local grand lists. Education tax rates are now uniformly tied to local per pupil spending levels across the state. In other words, a penny on the property tax rate now raises the same amount per pupil, regardless of where that pupil lives.
- School accountability procedures for student performance have been established under the EEOA, and schools statewide are now required to implement uniform quality standards.

There is some evidence to support the following observations, although not enough data exist to draw definitive conclusions:

- Per pupil spending variations between districts appear to be narrowing.
- Districts that have historically spent lower amounts per pupil appear to be increasing spending levels at a greater rate than those with higher per pupil spending amounts.
- Performance gaps among different student groups (i.e., gender, socioeconomic background) appear to be closing in a small number of schools.

Recommendations

In order to investigate the link between spending, school quality and student performance, a new financial accounting system would be required to measure spending by school rather than by school district. This is a major undertaking and may be problematic given the misalignment between Vermont's varied systems of school organization and local school tax districts. Without such an accounting change, however, it will be far more difficult to measure direct relationships.

Achieving financial and educational equity is a complex undertaking, as evidenced by this report. Passage of the EEOA brought significant changes that have moved Vermont closer towards the equity goal. This being the baseline report for future analysis, the strongest recommendation would be to stay the course and allow time for the EEOA to achieve the objectives that were set forth when the General Assembly passed the law in 1997. The next EEOA report is due in school year 2005.

V. References

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